

Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003

IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-4 (Canceled)

5. (Currently amended) An isolated RNA virus Porcine Reproductive and Respiratory Syndrome virus (PRRSV) comprising a recombinant nucleic acid ~~selected from the group consisting of~~

~~an *in vitro* transcribed RNA copy of an arterivirus genome and being~~

~~an *in vitro*-transcribed RNA of a cDNA copy of the arterivirus a PRRSV genome lacking the genetic information encoding arterivirus envelope protein in any of ORFs 1a, 1b, and 2-7.~~

6. (Canceled).

7. (Currently amended) A host cell culture with or transfected with a recombinant nucleic acid comprising at least one full-length DNA copy or *in vitro* transcribed RNA copy of an RNA virus's genome, wherein the RNA virus's genome is ~~greater than 15 kb~~ Porcine Reproductive and Respiratory Syndrome virus.

8 and 9. (Canceled)

10. (Currently amended) ~~A recombinant nucleic acid An isolated DNA molecule comprising an infectious clone based upon a positive strand RNA Porcine Reproductive and Respiratory Syndrome virus's genome, wherein the genome is at least about 15 kb, said infectious clone produced by a process comprising:~~

producing a recombinant nucleic acid comprising a nucleic acid sequence selected from the group consisting of an *in vitro*-transcribed RNA copy of the RNA virus's full length genome and DNA complementary to the RNA virus's full length genome.

Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003

11–13. (Canceled).

14. (Currently amended) The genetically modified RNA virus of claim 20 wherein the infectious clone further comprises at least one nucleic acid sequence encoding a virulence marker and/or a serological marker particular to said positive strand RNA virus, and wherein said at least one nucleic acid sequence has been modified to effect a change in virulence and/or a changed serological immune response.

15. (Currently amended) The genetically modified RNA virus of claim 14 wherein the nucleic acid sequence encoding said virulence or serological marker or virulence and serological markers is located within any of the genome's open reading frames encoding structural viral proteins.

16. (Currently amended) The genetically modified RNA virus of claim 20 ~~wherein said infectious clone~~ further comprises comprising a nucleic acid sequence comprising at least one open reading frame and wherein said at least one open reading frame is substituted by an ortholog of PRRSV's ORF7.

17. (Currently amended) The genetically modified RNA virus of claim 20 wherein at least one additional heterologous nucleic acid sequence is inserted into the ~~infectious clone recombinant nucleic acid~~, allowing the infectious clone genetically modified RNA virus to serve as a delivery system for ~~an additional~~ said at least one heterologous nucleic acid sequence.

18. (Currently amended) The genetically modified RNA virus of claim 17 wherein said heterologous nucleic sequence encodes an antigen.

19. (Currently amended) The genetically modified RNA virus of claim 20, ~~wherein said~~

Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003

~~infectious clone further comprises comprising a nucleic acid sequence comprising at least one open reading frame, said at least one open reading frame having been modified to effect a change in virulence and/or a change in serological response in vivo in a cell an animal into which the infectious clone the genetically modified RNA virus has been introduced.~~

20. (Currently amended) ~~An genetically modified RNA virus based upon an RNA virus's a Porcine Reproductive and Respiratory Syndrome virus's (PRRSV's) genome, said RNA virus being of the type having a positive strand RNA and further having genetic information encoding at least one envelope protein, said genetically modified RNA virus produced by a process comprising:~~

~~transfected a host cell with a recombinant nucleic acid comprising a nucleic acid sequence selected from the group consisting of an *in vitro*-transcribed RNA copy of the RNA virus's PRRSV's full length genome, an *in vitro*-transcribed RNA copy of the RNA virus PRRSV genome but lacking the genetic information needed to produce enveloped, infectious RNA virus, DNA complementary to the RNA virus's PRRSV's full length genome, and DNA complementary to the RNA virus PRRS genome, but lacking genetic information needed to produce enveloped, infectious RNA virus PRRSV; wherein the host cell is not susceptible to infection with said RNA virus PRRSV, to produce said genetically modified RNA virus.~~

21. (Currently amended) A vaccine comprising the genetically modified RNA virus of claim 20.

22. (Currently amended) A cell culture infected with the genetically modified RNA virus of claim 20.

23 and 24. Canceled

Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003

25. (Currently amended) A DNA comprising nucleic acid ~~selected from the group consisting of:~~

~~DNA complementary to a full length arterivirus genome and comprising:~~

~~DNA complementary to the arterivirus a Porcine Reproductive and Respiratory Syndrome virus (PRRSV) genome, but lacking genetic information encoding an envelope protein of said arterivirus PRRSV.~~

26. (Canceled).

27. (Currently amended) The genetically modified RNA virus of claim 20 wherein the host cell constitutively expresses at least one ~~envelope structural~~ protein of the ~~RNA virus PRRSV~~.

28. (Currently amended) A genetically modified RNA virus produced by a process of the type wherein a host cell is transfected with an infectious clone of an RNA virus to produce the genetically modified RNA virus, wherein the improvement comprises:

using, in said process, a Porcine Reproductive and Respiratory Syndrome virus as the RNA virus, and using a host cell not susceptible to infection with said RNA virus to produce said genetically modified RNA virus, and rescuing the genetically modified RNA virus therefrom.

29. (Currently amended) A recombinant nucleic acid comprising an infectious clone based upon a positive strand RNA virus's genome, wherein said RNA virus ~~has at least one envelope protein is a Porcine Reproductive and Respiratory Syndrome virus~~, said infectious clone produced by a process comprising:

producing a recombinant nucleic acid comprising a nucleic acid sequence selected from the group consisting of an *in vitro*-transcribed RNA copy of the RNA virus's full length genome, an *in vitro*-transcribed RNA copy of the RNA virus genome but lacking the genetic information encoding the at least one envelope protein, DNA complementary to the RNA virus's full length

Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003

genome, and DNA complementary to the RNA virus genome, but lacking genetic information encoding the at least one envelope protein.

30. (Currently amended) A composition for raising an immune response against a positive strand RNA virus's genome in ~~a subject an animal~~, wherein said positive strand RNA virus ~~has at least one envelope protein is Porcine Reproductive and Respiratory Syndrome virus~~, said composition comprising:

a recombinant nucleic acid sequence selected from the group consisting of
~~an in vitro transcribed RNA copy of the positive strand RNA virus's full length genome,~~
an *in vitro*-transcribed RNA copy of the positive strand RNA virus genome, but lacking the genetic information encoding the at least one envelope protein,
DNA complementary to the positive strand RNA virus's full length genome, and
DNA complementary to the positive strand RNA virus genome, but lacking genetic information encoding the at least one envelope protein.

31. (Currently amended) A cell culture containing a positive strand RNA virus's genome, wherein said positive strand RNA virus ~~has at least one envelope protein is Porcine Reproductive and Respiratory Syndrome virus~~ said cell culture infected with or transfected with recombinant nucleic acid selected from the group consisting of

~~an in vitro transcribed RNA copy of the positive strand RNA virus's full length genome,~~
an *in vitro*-transcribed RNA copy of the positive strand RNA virus genome, but lacking the genetic information encoding the at least one envelope protein,
DNA complementary to the positive strand RNA virus's full length genome, and
DNA complementary to the positive strand RNA virus genome, but lacking genetic information encoding the at least one envelope protein.

**Application No. 09/874,626
Amdt. dated February 4, 2004
Reply to Office Action of August 27, 2003**

Drawings:

Figures 3 and 4 are objected to in PTO-948 for having numbers and reference characters which are not plain and legible and uniformly thick. The applicants submit herewith replacement sheets correcting the deficiencies noted in PTO-948.